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Regulating the Private Sector: Government and Railways in Brazil, c. 1900

This paper examines factors leading to increased intervention by central government in the railway sector during the second half of the nineteenth century. The focus is, largely, on the major companies, particularly foreign enterprises in receipt of central government gold profit guarantees. It examines points of contact between companies and the state in order to analyze the degree of intervention in corporate affairs and the larger process of regulation which came to characterise railway construction and operations in Brazil. It will be argued that the nature of the Brazilian state and the novelty of railways, at mid century, resulted in a substantial level of initial supervision and state action. Thereafter the peculiarities of railway financing contributed to sustain and deepen interventionism. The paper begins with an assessment of some episodes in early railway history that illustrate a learning-by-doing process in state-business engagement. These episodes set the tone for subsequent relations. Attention is then given to key features of the guarantee system and official expectations about railway development, which contributed to legislative and attitudinal changes that conditioned policy and substantive developments after the turn of the century. The paper concludes by offering an explanation for the interventionist system that emerged in Brazil and lessons that might be learnt from the experience of this system in terms of current policy directions, specifically, privatisation and increased economic internationalism.

Railways: expectations and complications

Railways were regarded as significant by key public figures in the 1850s and beyond. Political and economic actors assumed that infrastructural modernisation would transform society and economy. Few, however, envisaged railways as challenging political institutions. Rather, it was assumed that railways would strengthen the authority of the central state. Perhaps this explains why large sums of public funds were made available to railway companies. It must, however, be remembered that the proportion of state expenditure actually absorbed by railway companies was much greater than initially envisaged. There are no accurate figures for the amount of public funds devoted by central and provincial/state governments to railways in Brazil. A not-very-exact proxy is provided by the distribution of British investment in Brazil. Stone provides some of the highest absolute estimates and, as the Table below illustrates, argues that investment in railways accounted for more than one-third of the stock of British capital placed in the country around the end of the Empire (1889) (Stone 1987: 153b).

Table: Sectoral distribution of British investment in Brazil (millions of pounds)

Year	Government	Railways Bonds	Public	Financial Utilities	Misc. Sector	Total
1865	£ 3.0 (64%)	£ 5.4 (27%)	£ 0.8 (4%)	-	£ 1.0 (5%)	£ 20.3
1875	£ 20.4 (66%)	£ 6.4 (21%)	£ 2.8 (9%)	-	£ 1.5 (4%)	£ 30.9
1885	£ 23.2 (49%)	£ 17.0 (36%)	£ 3.0 (6%)	-	£ 4.2 (9%)	£ 47.6
1895	£ 52.4 (56%)	£ 33.1 (36%)	£ 3.3 (4%)	-	£ 4.1 (4%)	£ 93.0
1905	£ 83.3 (68%)	£ 24.0 (20%)	£ 6.6 (5%)	£ 1.7 (1%)	£ 7.2 (6%)	£ 112.9
1913	£ 119.6 (47%)	£ 59.1 (23%)	£ 55.0 (22%)	£ 9.1 (4%)	£ 11.9 (4%)	£ 254.8

Source: elaborated from Stone (1987: 153b).

Between 1865 and 1885 Brazilian railways commanded the lion's share of British investment in the sector in Latin America. Thereafter Argentinian railways attracted more attention in London (Stone 1987: 73). Yet, as Stone would be the first to admit, his data underestimates the amount (and proportion) of British funds absorbed by Brazilian railways. In addition to specific railway debenture issues underwritten by the Imperial government for companies such as the domestically financed Estrada de Ferro Dom Pedro II (EFDPII) – which was a private company until 1865 – or the London-registered Bahia & São Francisco Railway Company Limited (B&SFR), a large proportion of the ordinary internal and foreign public debt was probably absorbed by railway enterprises, used to cover the dividends of private companies and finance the construction (and deficits) of government lines. Whatever the absolute figures, after agriculture railways accounted for the largest share of fixed investment in nineteenth-century Brazil. It is also probable that, after the 1860s, a very large proportion of recurrent central government expenditure found its way into the railway sector.

What was the result of this expenditure? Certainly not a national railway network, as was observed in 1887.[1] At best there were loose regional groupings, often widely separated from each other and internally fragmented by breaks of gauge. Did the disjuncture between expectation and expenditure, on the one hand, and result, on the other, explain the degree of state intervention? Or did excessive regulation account for inefficiency, high-cost operations and frustrated development? Almost from the outset it soon became clear that financing railways in Brazil would be an expensive exercise and that many of the problems – large and small – lay outside the experience of policymakers. It also rapidly became obvious that foreign contractors and financiers were equally unfamiliar with the practicalities of constructing and operating railways in Brazil.

Illustrative episodes: configuring business-state relations

Railways, inevitably, meant railway accidents. The early history of railway mishaps in Brazil provides insights into relations between companies and the state and the extent to which even fairly mundane events could provoke larger, probably unimagined, consequences. One of the first accidents occurred on the Recife & São Francisco Pernambuco Railway Company Limited (R&SFPR) during the early 1860s. A woman was struck and killed by an early morning ballast train. The engine driver was promptly arrested.[2] In the case of fatal accidents, Brazilian law required that the individual responsible should be held in custody pending enquiry. Given the delays involved in these proceedings, the company faced considerable disruption to services (and fi-

1 MACOP 1887: 175-176.

2 AEPPe EF V/24.

nancial losses). Skilled employees such as locomotivemen were in short supply. The company pressed for release under licence.[3] Persuading the authorities to do so proved a far from simple matter. A not dissimilar incident occurred in 1871 in São Paulo. An assistant guard was killed when a goods train and passenger train collided. In this instance, determining them to be the 'responsible persons', the chief of police ordered the arrest of the Superintendent and Traffic Manager of the San Paulo (Brazilian) Railways Company Limited on a charge of homicide.[4] The company responded by suspending services.

Whatever the legal position, companies protested that the reactions of over-zealous officials were disproportionate. They took little account of the complexities of railway operations nor of the distinct nature of the enterprise which were quite different in scale and organisation from existing systems of transport such as mule trains or private carriage firms, an argument confirmed by the impact of a suspension of railway services on the local economy. And there were further complications. The arrest of the R&SFPR driver prompted what may have been the first labour dispute involving skilled workers in modern Brazilian history. When news of the arrest of their colleague reached the locomotive depot, other drivers refused to take out their trains until he had been released.[5] The company sought to resolve the problem by reaching an informal agreement with the imperial (central) government railway inspector whereby, in cases of fatal accidents, locomotivemen would be released on company surety pending official investigation.[6] But it was rarely easy to persuade the police or provincial authorities to acknowledge such informal arrangements, particularly when foreign nationals or foreign companies were involved. Confronted with worker intransigence, the company was reduced to bluster or the threat of sacking workers and recruiting others from Britain, a time-consuming and expensive exercise.[7] The arrest of the SP(B)R Superintendent and Traffic Manager also indicated how a relatively minor event could escalate into

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3 AEPPe EF V/25-6, AEPPe EF V/30-2.

4 FO 13/477: 104; PSP 1872: 61.

5 AEPPe EF V/25-6. 27-9, 34; R&SFPR 1862: 61.

6 AEPPe EF V1/14-7, V/91-2; R&SFPR 1862: 61.

7 R&SFPR 1862: 3, 8-10; AEPPe EF V/39-41.

a diplomatic incident. The chance visit of two British warships to the port of Santos when the railway was in dispute with provincial police and judicial authorities, intemperate language by naval personnel and insistence by provincial and imperial governments that due process had to be observed conspired to trigger an outburst of anti-British sentiment, notwithstanding attempts by both British and Brazilian officials to resolve matters speedily.[8] Lengthy investigative procedures and pretrial delays were common in Brazil, occasioning frequent protests to the Rio de Janeiro Legation but the suspension of rail traffic was a blunt weapon, likely to provoke generalised local opprobrium.[9]

Arguably, labour recruitment and labour relations presented enterprises and authorities with a set of circumstances somewhat removed from traditional experience. In part these derived from the insertion of 'modern' capitalist institutions into a society and economy where attitudes to labour were hitherto conditioned largely by slavery and plantation agriculture. Irrespective of whether they were registered in Brazil or foreign-owned, most early companies initially recruited labour abroad. The first railway built in Brazil, the EF Mauá financed with local capital and inaugurated in 1854, was constructed by a British contractor employing largely Irish and English labour.[10] Most lines constructed in the 1860s and early 1870s also relied heavily on foreign contractors and construction workers. Similarly, once firms were operational, there was a continuing dependence on 'expensive' foreign workers, even to perform fairly menial tasks. As the R&SFPR discovered, although bright and intelligent, Brazilian labour was unaccustomed to disciplined work. In order to inculcate suitable habits of 'discipline' and 'vigilance' it was necessary to pay wages considerably above those normally prevailing in the local economy.[11]

Recruiting and retaining workers was a particular concern to the early companies. The issue was addressed in some company concession by exempting railway workers from military and jury service, a privi-

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8 FO 13/477: 92, 96-114, 13/477: 119-20, 121-22; AESP 7879 1 T.I. EEFF 1869/72.

9 FO 13/477: 57-9; AESP 7879 1 T.I. EEFF 1869/72.

10 FO 13/315: 138-40.

11 R&SFPR 1862: 8-10.

lege much appreciated in the late 1860s during the war with Paraguay.[12] However, ensuring that national guard recruiting sergeants honoured the concession was another matter.[13] Perhaps this was rooted in an earlier aversion, reflected at the highest levels, to accord special privileges to railway concessionaires.[14] The employment of foreigners, whether to construct or operate railways, meant introducing into Brazil groups of workers with a history of organisation and benefiting from consular protection. Railway navvies were notoriously given to "[...] combine in an attempt to rise their daily wages [...]": arriving in Brazil, workers contracted by the R&SFPR promptly absconded or attempted to secure a one-third wage hike.[15] If employers responded with the threat of imprisonment, workers did not hesitate to protest to consular officials and, sometime, the Brazilian authorities. Nor did workers demur from taking direct action. The success of organised protest tended to depend on the status of workers and moment in the history of a particular company. Skilled workers almost inevitably enjoyed greater success than labourers, the exception being navvies engaged in the construction of the first lines. Piecemeal, issue-related action was also less likely to occasion a knee-jerk, violent response from companies or the authorities than efforts to establish structured organisations. Individual immigrant workers, of course, were always susceptible to the threat of unemployment and destitution in a foreign land.[16]

Consular intervention on behalf of immigrant labour was not the only threat to Brazilian sovereignty in the area of labour relations. Slavery posed problems for companies and the state. Most foreign-registered companies were prevented from employing slaves, a requirement either imposed by the Brazilian government or insisted upon by shareholders. Yet this requirement was often honoured in the breach rather than the commission. Contractors, who were agents of the railway companies, argued that they were not bound by engagements entered

12 AEPPe EF 1/21; CP 1870: 41; CI 1871: 23.

13 AEPPe EF 1/21; III/31; III/334-335.

14 AN/MT IT3 105.

15 AEPPe EF III/36-41.

16 AEPPe EF III/21-28 V/25-6, 27-9, 34, VI/14-17; AESP. 1074, 279; R&SFPR 1862: 61; FO 13/450: 194-5.

into by the companies themselves. Obliged by its contract with the imperial and provincial governments not to employ slaves, the R&SFPR further promised prospective shareholders "[...] not to possess slaves, and not to employ in the work of construction other than free people [...]".[17] Yet the company was soon accused of either ignoring contractual obligations or turning a blind eye to the use of slaves by contractors.[18] Occurring in 1856, relatively soon after the effective end of the trans-Atlantic slave trade to Brazil, the charge provoked a sharp response from the Foreign Office which accused the company of being in breach of its agreement with the Brazilian government and the British public. At a time when the British government was pressing the Brazilian authorities to liberate illegally imported slaves, the company was accused of giving encouragement to 'African Slave Traders'.[19]

Brazilian action to prevent (or inhibit) foreign companies from employing slaves has been variously explained. The measure may have been tailored to the sensibility of British investors and designed to overcome a potential reluctance to venture funds in joint stock enterprises registered to operate in a slave economy. Alternately, the devise may have been conceived to prevent foreign companies competing with local enterprises in a tight labour market (Lewis 1991: 209). Whatever the intent, foreign investment in railways and importing gangs of construction workers to build the early lines and subsequent recruitment of skilled workers changed the complexion of the labour market just as *paulista* planters were attempting to attract settlers to the new coffee frontier in the centre-west of the province. As the imperial and provincial governments were to find, immigrants – whether contracted personnel or potential settlers – brought with them foreign ideas and a degree of foreign supervision. Neither were welcomed nor anticipated.

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17 BR 1855: 2.

18 FO 84/996: 131-6.

19 FO 13/346: 143-4.

Financing railways

Investment in railways enterprises – whether by foreign firms or local capitalists – occasioned new challenges for the state and transformed business-government relations, involving both the threat of external financial supervision and state regulation of private enterprises. The early history of railway financing in Brazil was shaped by two interrelated factors, a scarcity of domestic funds and the perceptions that external finance was readily available and cheap. Initial projects were also invested with political and economic expectations which were often unrealistic and sometimes irreconcilable. Together this combination of perceptions and expectations resulted in both initial mechanisms to promote private investment in railway development and the ultimate predominant role of the state in the sector.

In the 1830s and 1840s Brazilian policy-makers assumed that the country was ripe for railway development and that companies would earn spectacular profits. Hence, effective regulation was vital.[20] Railways would promote economic modernisation by encouraging a spirit of enterprise and, in particular, stimulate production and trade by cutting transports costs, thereby increasing the value of, and return on, investment in other activities. Immigration would follow and labour costs fall.[21] These assumptions ignored the technical difficulties of building railways in much of the central coastal region of the country and the generally low level of market activity. The topography of coastal Brazil meant that companies were operating at – or beyond – the existing frontier of railway technology, with the inevitable consequences for construction and operating costs and quality of service delivery. Nonetheless, expectations that railway operations would be profitable coloured official attitudes, further inculcating the natural tendency of the imperial bureaucracy to supervise, to regulate and to intervene. In official circles this resulted in a suspicion – not entirely without foundation – that commercial enterprises were intrinsically corrupt. Given the inherent monopoly power of public utilities, successful companies were viewed

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20 AN IT3 105; PSP 1852: 41-3.

21 PSP, 1855: 42-3, 1856: 33.

as abusing their position to milk the public while less profitable firms castigated for a culture of dependence on the state.

Irineu Evangelista de Sousa, subsequently baron and later viscount Mauá, a Brazilian entrepreneur cast in the historic mould, suffered few delusions about financing railways in Brazil (Marchant 1965). Observing that his company, the EF Mauá, was finally profitable and declaring a dividend of 8%, a rate much better than anything obtainable in London, he recognised that railways were unlikely to attract local investors. While 8% would confirm to British investors the profitability of railways, Brazilians demanded more and would not tie up their capital in projects that required a lengthy gestation period before realising a return.[22] Railways projects were lumpy, absorbed huge amounts of capital and required a substantial profit lead-in period. The technology was new and – in Brazil in the 1850s – largely untried while organisation and operation also necessitated novel forms of managerial expertise. In these circumstances it was hardly surprising that Brazilian official and railway promoters looked overseas for funds and personnel.

By the mid-nineteenth century, in most countries the railway sector had come to be regarded as an area where the state would have to play at least an enabling role. The alternatives were direct official funding and operation or substantial state support for the private sector. The latter implied supervision and regulation. By the 1860s, in Latin America and elsewhere, dividend guarantees underwritten by the state were gradually displacing *ad hoc* forms of official aid for railways (Lewis 1983). By the mid-1860s the official optimism of earlier decades was tempered with realism as losses accumulated and the quotation of Brazilian railways securities slipped in London. While castigating the capriciousness of foreign stockmarkets, policy-makers acknowledged that railways had not been an immediate success nor were enterprises as profitable as anticipated.[23] The magnitude of technical difficulties confronting promoters pushing lines over the coastal escarpment slowly dawned. Problems of topography were compounded by inexact knowledge of the terrain and a lack of skilled personnel and equipment. Unfamiliarity with the administration of railways also pushed up operating

22 IHGB Coleção Mauá, 515: 11-43.

23 MACOP 1864: 14, 1866: 64, 1867: 100.

changes. In Europe, construction was easier, resources more plentiful and traffic greater.[24] There was also growing anxiety in official circles about the impact of demands being made upon the local capital market by nationally-owned lines.[25] These imperatives contributed to the quest for foreign funds and an acceptance of the inevitability of the profit guarantee system. By the end of the decade there were eight railways in operation: one, the EFDPII, initially financed with private and state capital had been nationalised; three pioneer lines in the provinces of Bahia, Pernambuco and São Paulo were registered overseas and were provided with joint imperial and provincial profit guarantee; three further companies, operating in the provinces of Bahia, Rio de Janeiro and São Paulo, benefited from provincial guarantees; two companies, both in Rio de Janeiro, functioned without guarantees. State action of this order was necessary because in the seventeen years since the inauguration of the first company, less than 400 miles of track had been laid: in a similar period a railway network of more than 3,500 miles have been built in the USA.[26]

By the 1860s, profit guarantees had become a fairly conventional means of promoting direct, private investment in railways. The system was envisaged as a temporary expedient, promising shareholders a reasonable rate of return on investment during the development phase of operations until earnings were sufficient to provide an adequate dividend. Variants of the system operated in Europe, Latin America and Asia. At this stage the going rate in Latin America was around 7%. The principal novelty of the Brazilian guarantee system was that the central (imperial) government covered 5% while the provinces provided an additional 2%. Provinces offering a guarantee on their own account, an increasingly common practice in São Paulo during the 1870s, usually provided 7% (Lewis 1991; Love 1980: 64). Imperial guarantees were paid in gold while the provinces offered paper, the exception being the supplementary guarantees awarded to the B&SFR, R&SFPR and SP(B)R. (The imperial government assumed responsibility when the provinces of Bahia and Pernambuco were unable to honour obligations

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24 MACOP 1866: 65, 1867: 100.

25 MACOP 1862: 22, 1864: 15; El Karah 1982.

26 MACOP 1869: 33-4.

to the B&SFR and R&SFPR respectively.)[27] As dividends were normally guaranteed for a specific period, for the imperial government, the system was an alternative to earlier, open-ended methods of support. The imperial government had been pressed to invest in several pioneer companies and to guarantee and service railway corporate debt.[28]

Although profit guarantees were an established practice by the third quarter of the nineteenth century, the system came to haunt both the Brazilian government and the companies. Limited in time and devised as a loan rather than a grant (advances were to be repaid out of future profits), it soon became obvious that several lines were committed to a long-term dependence on state subsidies. Railway companies claimed that a failure to cover guaranteed returns on investment would jeopardise Brazil's credit in overseas financial centres. Indeed, as guarantee payments mounted inexorably, government credit was questioned, ultimately provoking the nationalisation of some lines. For its part, the imperial government tended to regard railways failing to cover dividends from operating profit as at best inefficient or, worse, corrupt. Paradoxically, profitable enterprises were also caught in the guarantee trap. Even after earnings were more than sufficient to pay dividends at or above the guaranteed level and earlier state profit subsidies had been repaid, companies found governments anxious to retain a claim on future earnings, possibly as a means of cross-subsidising weaker lines.

By 1873 operating profits of the London-registered San Paulo (Brazilian) Railway more than covered the guarantee. As per the original concession, the company was obliged to divide earnings above 8% with the government. Some fourteen years later, as total payments to the imperial government were approaching the sum previously paid out by the government under the guarantee, the company began to contemplate abrogating the guarantee clauses in its concession.[29] By the end of 1887, with a final instalment of approximately £ 90,000, the company had covered the £ 518,443 profit guarantee received from the imperial government and reserved the right to renounce the guarantee, a course

27 MACOP 1863: 12.

28 MACOP 1869: 35-7.

29 Itamaratí 413 - 3 - 425.

apparently recognised by the government.[30] Yet it was to take almost three years before the issue was settled. The company protested at the delay, which it depicted as a 'tax' on the company and the province (as rail freights were being maintained at an artificial level by the government in order to ensure official participation in 'excess' profits above 8%). Exasperated at what it regarded as official procrastination, the company threatened to take unilateral action.[31] The provincially franchised, *paulista*-owned Companhia Paulista seems to have found negotiating guarantee renunciation with the São Paulo authorities somewhat less fraught though not necessarily less time consuming.[32]

By the end of the Empire, the central government had underwritten railway profit guarantees totalling 167,021: 299$678 per annum. At this stage many guaranteed lines were running a deficit while those that were not were only just able to cover operating costs leaving hardly any net surplus to provide dividends. In addition, all but three of the ten companies owned by the government were also operating at a loss. It was an enormous burden for the national exchequer.[33] By 1886/7 the central government had, over the years, paid out a total of £ 12.8 million to seventeen companies. Of these only two had repaid (or were repaying) past advances.[34] At this point the outstanding central government sterling debt stood around £ 23 millions.[35] Doubts had been expressed about the system almost twenty years earlier. Already in 1865 the R&SFPR and B&SFR were regarded as bottomless pits into which the government was pouring treasure. According to ministry officials, burdened with over-blown administrations, the discredited directors of these companies displayed greater zeal in pressing fanciful claims upon the government than in developing the earning potential of their respective zones.[36]

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30 Itamaratí 413 - 3 - 425, 414 - 545E; PSP 1889: 112.

31 Itamaratí 413 - 3 - 425, 414 - 4 - 545E; AN/Ministerio dos Transportes: 151/6, 10226, 151/8, s/no.

32 CP 1875: 43-51, 1876: 11, 1877: 60-2, 1878: 9, 1882: 7-8.

33 MACOP 1889: 168-9.

34 MACOP 1887: 171; RT 1888: 286.

35 IBGE 1987: 541.

36 AEPPe EF II/323-7, AN/MT: 161, 2865/2-383-4; MACOP 1866: 71-2, 75.

Official anxiety at the apparent guarantee dependence of some pioneer railways (notably those in receipt of gold guarantees) and spiralling claims on the imperial treasury was tempered by government desire to encourage railway expansion. Successive reports to parliament underscored the importance attached by government to fostering transport improvement (Lewis 1991a; 1991b: 201-202). Strategic and political considerations shaped national railway strategy. Yet, while extolling railways as a symbol and the substance of modernity, imperial agencies were compromised by the spiralling costs of sustaining a 'national' railway project. Several attempts were made to address financial and administrative deficiencies of the guarantee system. These ranged from piecemeal measure to increase the earning potential of individual companies to proposals for root and branch reform.

As B&SFR and F&SFPR guarantee payments mounted in the 1860s, a two-fold official response emerged – procrastination over the settlement of guarantee claims and schemes to foster rail traffic growth. The procedure to verify company capital expenditure and operating accounts ground fine and exceedingly slow, triggering inevitable protests from the companies and threats to expose official bad faith.[37] Initially, road improvement in the vicinity of guarantee-dependent lines was the preferred device to encourage traffic and revenue growth. By improving access to stations, feeder roads might extend the frontier of market production.[38] Subsequently, the solution to low traffic and earnings would be state railway building, narrow gauge main line extensions and branch line additions to the board gauge B&SFR and P&SFPR – the policy of *prolongamento*. During the War of the Triple Alliance, when the Argentine, Brazil and Uruguay had fought Paraguay, few new railway projects had been inaugurated in Brazil. However, as the war drew to a close, several new schemes were essayed in São Paulo. By the end of the 1860s these took concrete form when provincial concessions were issued to locally-financed companies.[39] By 1870 about 200 miles of line were under construction, all bar 20 miles in São Paulo.[40] Else-

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37 AEPPe EF II/323-7, II/179-82; R&SFPR 1863.

38 MACOP 1867: 110; AN/MT: 162.

39 PSP 1867: 46-7, 1868: 25-30, 1870: 24-8.

40 MACOP 1871: 102.

where, encouraging new construction proved more problematic. This, and the burden of gold guaranteed, triggered a reappraisal the regulatory framework governing the authorisation and supervision of railway projects, the thrust of the reform being to simplify procedures and give the provinces greater autonomy.[41] Particular attention was paid to extending lines in Bahia and Pernambuco and constructing a strategic network ('military' railways) in the far south.[42]

The railway law of 1873 (lei no. 2237 of 3 May 1873) and associated financial decree 2450 of 24 September 1873, implemented by the *regulamento* of the following year was the first major recodification since the railway law of 26 July 1852. These measures were subsequently complemented by decree 6995 of 10 August 1878 which determined the rate at which financial obligations incurred in paper currency were to be converted into sterling. Driven by perceived shortcomings in the existing guarantee system, in addition to conferring freedom on the provinces, the act attempted to standardise and streamline regulations governing railway operations as well as the granting of concession, obliquely admitting that the previous system was too interventionist.[43] The principal modification resulting from the law and decree related to state support for private lines. The decree provided a mileage subvention or guarantee for projects which could demonstrate a net earning capacity of 4%. In either case, support was limited to 30 years. The 1852 act permitted the granting of guarantee for up to 90 year. Limits were also placed on the maximum capital sum to be guaranteed: previously the limit had been recognised constructions costs per mile. The period during which the state might elect to expropriate a line was reduced from 30 to 15 years: it was thought that the existence of an extended period during which the state had to right to purchase a line generated uncertainty. The 'zone of privilege', the region within which other lines might not be franchised was reduced marginally, from 20 miles on either side of the track (33 kms) to 18 miles (30 kms). Harmonising concessions granted to individual enterprises, the new act

41 MACOP 1873: 65-9.

42 MACOP 1873, 1874: 102, 105-6, 106-12; Ewbank da Camara (1874: 30).

43 MACOP 1875: 70-77.

provided for the duty free import of railway equipment and material while coal was to be free of duties for 30 years.

By 1879 there were approximately 1,800 miles of railway in operation in Brazil with a further 1,200 miles under construction.[44] However, if the new legislation was designed to promote private – particularly foreign – investment, it was relatively unsuccessful. In 1881 state enterprises were operating a network of some 600 miles with a similar mileage under construction. Private companies (essentially locally funded firms) were operating approximately 350 miles of track with virtually three times this figure under construction. Companies guaranteed under the old system, basically foreign registered concerns, had built nothing beyond mileage specified in their original concessions.[45] Meanwhile, most state lines operated at a deficit and payments to unprofitable companies enjoying gold guarantee continued to burden the imperial exchequer. By 1883 state-owned lines had a little less than 1,000 miles in operation with a further 450 miles under construction. Companies licensed exclusively under the 1873 legislation were operating something over 600 miles while laying around 300 miles.[46]

The time was ripe for another change of policy. In 1887 Antonio Prado, Minister of Agriculture, Commerce and Public Works proposed the formulation of yet another national railway programme. At this point it was estimated that approximately £ 11-13 million [102,370: 513$517] had been paid out in profit guarantees, half of which had been absorbed by two companies, the B&SFR and R&SFPR.[47] Unsurprisingly, once again the cardinal objective was to reduce the burden on the exchequer. Cross-subsidisation and economies of scale lie at the heart of the proposal which envisaged the formation of regional networks, particularly in the north-east. This would reduce operating costs, facilitate the flow of traffic and generate revenue (Rodrigues 1902: Appendix 1; 101-102). Over thirty years after the inauguration of the first line, it was acknowledged that the lack of a national railway plan had resulted in a collection of regionally isolated networks, separated by distance and breaks of

44 MACOP 1880: 231-7.

45 MACOP 1882: 213-5.

46 MACOP 1884: 255.

47 MACOP 1887: 171; RT 1888: 286.

gauge – a defect only gradually being remedied. Founded upon an insufficiency of basic data, the priority of early railway strategy was the construction of cheap lines into the interior. Subsequently there was a shift towards the building of strategic lines, for example in Rio Grande do Sul in 1873. Little cognizance was taken of future development needs and railways were prioritised when a more rational use might have been made of the river system.[48]

Bureaucratic soul-searching in the declining years of the Empire yielded a strategy that would only reach partial fruition during the Republic – expropriation and leasing (Duncan 1932). Regional networks, to be forged from an amalgamation of state-owned railways and expropriated loss-making guaranteed lines, would be leased to private operators. A year before the fall of the monarchy an imperial agent had been despatched to London to present expropriation terms to the directors of the B&SFR and R&SFPR, returning to London a year after the declaration of the Republic (Rodrigues 1902: Appendix 1; 101-102, Appendix 2; 103-104). The scheme, which prefigured some current Latin American privatisation proposals, foundered on the intransigence of the British companies and the need for further state expenditure to integrate and upgrade the networks, all of which depended on the ability of the new regime to secure an agreement with European creditors for a funding loan in a period of political instability and financial turmoil associated with the transition from empire to republic (Franco 1983). The government was also loathe to part with profitable lines while private operators were disinclined to bid for companies with a history of loss-making. Yet, by the end of the century three small north-eastern lines had been leased and, in two cases, had turned losses into operating profits.[49]

At the beginning of the twentieth century Brazil was in a position to expropriate the British-owned north-eastern railways, bringing to a close the system of gold guarantees begun half a century earlier, thereby giving substance to network leasing projects which had emerged fitfully in the 1890s (Duncan 1932). Brazilian international credit was restored when agreement was finally reached with foreign banks. The 5%

48 MACOP 1887: 170, 174-6.

49 BR 1899: 300; RT 1899: 720-1.

funding loan floated between 1898 and 1900 to cover the coupon on existing issues has been described as a watershed in pre-First World War economic policy. In the face of considerable domestic opposition, the federal government agreed to a programme of deflation while building-up holdings of foreign reserves (Fritsch 1988: 7; Halsey 1977: 120). Shortly thereafter (and somewhat against the letter of the funding agreement which placed a ten-year embargo on new loans) Brazil issued a series of railway guarantee recession bonds between 1901 and 1905 to buy out private interests, mainly in the north-eastern railways (Halsey 1977: 120; *Economist* 1901: 1656). London directors finally agreed to place before shareholders government proposals for a buy-out.[50]

The legacy of the guarantee system

With the possible exception of São Paulo, the history of dividend guarantees in Brazil was largely one of failure. The arrangement was essential if private investment in the sector was to be stimulated and sustained. Yet few companies were ever able to cover the guaranteed rate of return from net operating profits, the reasons for which lie outside the scope of this study (Duncan 1932; Lewis 1983: 225-278). The system, however, had an immediate and lasting impact upon business-state relations in the railways sector and, possibly, beyond. In official and technocratic circles, and later amongst the population at large, guaranteed lines – particularly foreign-owned companies – came to be seen as inefficient, exorbitant monopolies. This view underpinned the campaign by bureaucrats and the engineering community in the 1880s for railway nationalisation.[51] The result was a legacy of intervention at company level in addition to regulation at sectoral level. By the end of the nineteenth-century, railway regulatory agencies were to be found in most countries. Arguably, what distinguishes Brazil is the degree of official engagement in day-to-day company decision making. The picture that emerges is of a state unable to co-ordinate macro strategy but intervening in virtually every aspect of operations.

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50 IHGB 585, R&SFPR 1901.

51 Clube de Engenharia 1882; RT: 855-6.

Guaranteeing profits, of necessity the state took an interest in construction and operation costs. Railway concession provided that capital accounts had to be verified by the franchising authority – central or provincial government, sometimes both – in order that capital should be recognised for guarantee purposes. Similarly, operating data was scrutinised by licensing agencies to determine allowable expenses and the extent of subsidy required to meet the guarantee. Entirely logical, the smooth operation of the system assumed a degree of goodwill amongst all parties. This was sometimes lacking or evaporated in the face of disagreement.

In the long-run, Brazil scrupulously honoured profit guarantee obligations but, during period of financial stringency, the government had every incentive to procrastinate. Inadequate route planning and costing inevitably occasioned misunderstanding and antagonism. Having been prepared to give the company the benefit of most of their earliest doubts, official were, for example, taken aback by the lengthy delays and mounting costs associated with the completion of the first section of the R&SFPR. Requests by the company for an increase in authorised (guaranteed) capital provoked first alarm and subsequently outrage as a series of technical difficulties and natural disasters delayed construction, ultimately triggering demands for the expropriation of the company.[52] The experience of the R&SFPR was not untypical. Almost all early Brazilian railways were under-costed: technical problems and the cost of acquiring land meant that original estimates were wholly inadequate.[53]

The experience inculcated amongst political figures a suspicion of enterprise and amongst bureaucrats a habit of scrutiny, dispute and referral to 'higher authorities'. It also resulted in direct government action in areas which in other circumstances might have remained the province of firms and shareholders or companies and customers. In effect, even mundane commercial operations became highly politicised. A few examples of the resulting culture of scrutiny and intervention will suffice.

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52 PP 1856: 65; AEPPe EFII/179-82, III/208-9, II/281-98; Ottoni 1866: 23-6; FO 13/356.

53 FO 13/330, 13/356; R&SFPR 1857, 1862: 3-7; Itamaratí 413 - 3 - 422; Ottoni 1866.

Guarantee regulations required companies to justify each and every call for capital. Routinised and time-consuming, the process was no safeguard against corruption, as EF Sorocabana shareholders learnt when it was discovered that a former chairman had appropriated capital raised by company stock issues for his own purposes.[54] With monotonous regularity, company chairmen and secretaries sought authority to make calls on subscribed, recognised share issues. In the case of companies registered in Britain, requests were addressed to the Brazilian Minister in London who referred them to Rio de Janeiro. Locally financed railways addressed their requests to the president of the province who in turn forwarded details to the Imperial government.[55] São Paulo politicians bemoaned the conflicts of provincial and imperial jurisdictions in the awarding of railway concessions as early as 1873.[56] Supervision and indecision of this order irked. By the end of the Empire *paulista* entrepreneurs were becoming increasingly critical about the 'inconvenience' of referral to Rio de Janeiro.[57]

At some point in the second half of the nineteenth century virtually all governments assumed the power to regulate rail freight. Most Latin America railway franchises specified that tariffs required official approval, the level at which rates were set usually being referred to a given gross or net return on investment. In Brazil, non-state railways eschewed the philosophy of developmental tariffs. Freights were normally fixed at a level marginally below prevailing charges levied by high cost competitors – muleteers and carters. Guarantee authorities sustained this strategy. Company proposal for even fairly modest downward revisions in rates were countered by exhaustive analysis.[58] Rather than tariff reductions, in the early years, government was more likely to sanction sur-charges to raise extra revenue.[59] Unauthorised downward adjustments of freights usually triggered a swift, if oblique response.[60]

54 *Correio Paulistano* 1880: 2e-3b; CS 1882: 3-4.
55 Itamaratí 413 - 3 - 423; FEPASA, Copiador "A".
56 SP 1873: 112-24.
57 CP 1884: 6-7, 1884: 9.
58 AEPPe EF I.
59 Itamaratí 413 - 3 - 422; PSP 1868: 42-3, 1868: 9.
60 PSP 1868: 10.

Yet, as indicated above, it was the refusal of the imperial government to permit SP(B)R tariff reductions at the mid-1880s which occasioned greatest protest.[61]

Given the cost of the guarantee system, official anxiety to vet capital and operating accounts and, where possible, to milk the tariff was understandable. Action in other aspects of railway operations was less immediately comprehensible. The R&SFPR was required to submit for government approval schemes for the transhipment of cargo from the main depot to the port.[62] When trains failed to run to timetable, a reprimand would be issued from the presidential palace.[63] Little wonder that railway officials felt it necessary to apply to government house for authorisation to run excursion trains.[64] Less mundane requests for minor route realignments were appraised as if a new concession was being sought.[65] Changes to construction specification were similarly subject to exhaustive re-examination.[66] Lines franchised during the second wave of railway construction in the 1870s were, as companies organised in the 1850s, subject to the contesting claims of competing local interests, all clamouring for distinct routes.[67] The outcome was delays, increased costs and a culture of layered – regional, provincial and national – political intervention in railway route planning.

Explaining the culture of intervention

The extent of government involvement in railway development and official involvement in the affairs of individual companies – intervention at macro and micro levels – in Brazil in the second half of the nineteenth century can be explained by a number of factors. First, the nature of the Brazilian state; secondly, the character of railway

61 CP 1883: 10, 1884: 6, 1884: 8-9, 1885: 3-4.
62 AEPPe EF III/318-9.
63 AEPPe EF III/159-61, 164-66.
64 AEPPe EF II.
65 Itamaratí 413 - 3 - 422.
66 AEPPe EF III/141-2, III/145-8.
67 El-Kareh (1980); Lassance Cunha (1909); Lewis (1991); Pereira da Silva (1904).

enterprises; and, finally, expectations triggered by infrastructural modernisation.

Although in economic terms an archipelago of regions, the Brazilian Empire was a highly centralised polity. Constitutionally, the remit of the central (imperial) government was large and the autonomous space allowed to provincial administrations limited. Formally a constitutional monarchy, a great deal of discretion was accorded to the Crown – the so-called moderating powers. Vested in the Emperor, these were exercised through the Council of State. The political class was small, enjoyed a great deal of political independence from regional economic elites and was bound together by links of education, marriage and self-interest. The political class enjoyed the substance and reality of power.[68] It was also committed to a Gerschenkronian 'project' which vaunted the state and conceived of political authority as a mechanism to integrate and modernise Brazil. In this railways, as any other entities or sectors, were subordinate to, or explicitly licensed in pursuit of, that project. The result was a clash of cultures – between modern business enterprises in formation and a bureaucracy imbued with neo-mercantilist sentiments.

Railway enterprises were not unique in receiving state support or being regulated. Subventions and company specific subsidies were, from time to time, available to investors venturing capital in other activities in pre-1889 Brazil (Eisenberg 1874; Topik 1987). According to Topik this tradition was carried forward into the Republic, certainly as regards the railway sector was concerned and notwith-standing commitments to economic liberalism (Topik 1987: esp. 93-09). Arguably, attitudes to private business were best signalled by the highly-restrictive regime governing the formation of limited companies in force for much of the period from the 1850s to the 1880s. Economic initiatives were regarded both as deserving of state support and with suspicion. In a predominantly agrarian and commercial economic structure, the attitude to railways, public utilities and even manufacturing was ambivalent. Even when viewed as essential, firms were still seen as threatening, particularly when foreign capital was involved. Local interests and policy-makers were anxious that enterprises should not become 'a state

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68 Murilo de Carvalho (1980); Faoro (1975); Pang (1988); Uricoechea (1980).

within a state' (Galvão Queiroz 1884: *passim*, esp. 17, 27-28). But railways were different from other enterprises. As is well known, the magnitude of investment, scale of operations and organisational complexity of railways effected a managerial as well as a technical revolution. Even in Great Britain by the 1840s it was recognised that state action was required. Considerations of safety, the monopoly character of enterprises, the need to police private financing, all compelled governments to act or to establish regulatory frameworks. In some continental European countries, like Belgium, state railway monopolies were established, in others mixed entities emerged or a private-public sector partnership was essayed, as for example in France where the state initially assumed responsibility for the basic infrastructure, leasing track operating rights to private firms. But in Brazil the disparities between state aspiration and state competence were greater and the distance between state and private initiative relatively larger. Perhaps this accounted for the degree of 'micro-interventionism' in corporate decision-making.

The introduction of foreign finance (indeed, the initial assumption of a dependence on overseas capital) also fuelled interventionism. Whether during the Empire, adjusting to the end of the transatlantic slave trade and the slow, phased, abolition of slavery and mounting foreign borrowing, or during the first decade or so of the Republic when debt and monetary disorder appear likely to result in external financial supervision, nationalist sentiment were never far from the language and form of policy. In 1913 the Brazilian foreign public debt was around £ 103.8 million, £ 16.6 million of which have been issued at the beginning of the century to buyout guaranteed railways (Halsey 1977: 119, 120; Duncan 1932). A generation earlier, at the end of the of the Empire, cumulative guarantee payments to railway companies accounted for a much larger share of the debt. This burden and the pressure of gold guarantees upon the exchequer and the exchange contributed to the climate of nationalism, intervention and suspicion of foreign companies. Requests by London-registered companies for British diplomatic assistance did nothing to allay these fears.[69] Official

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[69] FO 13/438: 5-6, 13/437: 9-15, 128/102: 262-5, 13/511: 13.

British pressure on Brazil over the slave trade and slavery coupled with the example of highly profitable London companies such as the SP(B)R and guarantee dependent lines like the B&SFR and the P&SFPR ensured that sensitivity about national sovereignty and the exploitative nature of foreign enterprises remained to the fore. Similarly, financial chicanery such as that associated with the EF Sorocabana and demands emanating from virtually all early companies – from the nationally owned EFDPII to the British registered gold guaranteed lines – for an increase in recognised guaranteed capital convinced some officials that every enterprise was tarred with the same brush. They were speculations rather than public works, organised by greedy unpatriotic (or foreign) capitalists intent on exploiting government generosity. A pre-disposition to bureaucratisation, coupled with nationalism and the sheer novelty of railways ensured that corporate operation would be closely – and suspiciously – supervised from the outset.

From 1852 until the system was liberalised in 1873, a highly centralised, bureaucratic administrative system ordered the issue of railway concessions, inspection and regulation, even for companies franchised at provincial level. Correspondence flowed from enterprises to local agencies, from agency to provincial government and imperial ministry and from provincial administration to the central government in Rio de Janeiro and, in the case of foreign owned companies between ministries in the capital and between the ministry of foreign affairs and legations abroad – and back again. This was not conducive to business decision-making. Even minor commercial matters would be referred to provincial authorities, or to Rio de Janeiro for decision. By the end of the Empire companies, local agencies and provincial administration were all complaining about the length of time required to obtain an 'opinion' from imperial ministries. Imperial sclerosis was translated into business paralysis.

Conclusion

If the history of business-state relations in the railway sector in Brazil during the second half of the nineteenth century have any lessons for the present day process of liberalisation and privatisation, they relate to expectations and cultures. Despite recent policy initiatives, Brazil remains one of the most statised economies in Latin America: the degree of openness is low and incidence of regulation high. It is now recognised that efficiency and productivity gains from the privatisation of public enterprises, particularly in the area of basic services, requires the creation of effective regulatory agencies. The problem for Brazil is that hitherto regulation has often been confused with intervention. This, coupled with a statist tradition does not augur well. Nineteenth century experience, notably during the Empire, also points to the need for clarity in agency jurisdiction. Following railway legislation in 1873-4 designed to facilitate decision-making at provincial level, corporate complaints about over-lapping or competing provincial/imperial areas of responsibility mounted. Whether this was due to ingrained habits of centralism or the imperfect drafting of legislation may be debated. Nevertheless, it highlights the need for clarity. Regulatory bodies can only facilitate gains anticipated from privatisation if their brief is specific and if granted effective powers, powers which should be exercised to establish the rules of the game rather than to design the decision-making process at firm level. This implies not only the separate responsibilities of official agency and enterprise but an acceptance of the distinct cultures of each. The function of the enterprise is to seek profit and that of the agency to bound the market so as to ensure effective competition.

Expectations must also be realistic. The history of railways in late nineteenth-century Brazil reveals many facets of delusion as much as disillusion. Of themselves, railways could not drive the economic changes anticipated of them. At the beginning of the twentieth century, after more than fifty years of construction, even the provinces/states of coastal Brazil were hardly linked together by railway lines. The limits of technology, topography and the nature of the market muted the economic impact of infrastructural modernisation. In part dependence on state guarantees demonstrated that companies were not profitable. The traffic just was not there while many factors – not simply greed and peculation – made for high operating expenses. Railways were lumpy and only potentially developmental. Half a railway network is not half as profitable as a completed system: if other resources were lacking – labour, capital and enterprise – railways would not inevitably promote production for the market. In central Brazil the EF Dom Pedro II ultimately delivered anticipated political and economic functions. It signalled the reach of the central state, integrating subregional markets and promoting production and exports. In São Paulo, railways triggered an impressive outward expansion of the production frontier. Elsewhere, railways remained marginal or, at best, performed largely political functions. Like the manager of the Banco do Brasil, stations masters of government railway companies were representatives (or symbols) of the central state. The paraphernalia of railways – tracks, marshalling yards, signals, the telegraph, locomotives, cargo wagons and passenger carriages might also have represented the market economy but they did not create it. Similarly, in the late twentieth century, privatised utilities will not of themselves transform the economic superstructure of the country nor are they likely to become instantly efficient or profitable without institutional change elsewhere.

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